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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR   | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|------------------------|---------------------|------------------|
| 10/090,208      | 03/04/2002  | David Frederick Jordan | 17805               | 3487             |

7590

03/06/2003

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EXAMINER

CLINGER, JAMES C

ART UNIT PAPER NUMBER

2821

DATE MAILED: 03/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/090,208

Applicant(s)

Jordan et al.

Examiner

Jim Clinger

Art Unit

2821



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Mar 4, 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Mar 4, 2002 is/are a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 3 6) ☐ Other:

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sievenpiper et al.(6,441,792) in view of Maoz et al.(6,466,176).

Figure 6a of Sievenpiper discloses a transmission line feed(21), and a reflector(16) coupled to antenna elements(18) which operate in the PCS and AMPS frequency band as disclosed in figure 4.

Sievenpiper does not disclose the recited antenna element arrangement.

Claim 1, figure 3 of Maoz discloses a multiband antenna with first(104) and second(109) slot antenna elements.

The antenna arrangement disclosed in Maoz provides improved multiband performance(abstract).

Claim 2, figure 3 of Maoz discloses a PCB(101).

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Claim 3, the use of FR4 as PCB material is well known in the art, and its use in the recited invention would be an obvious modification of the above referenced and disclosed antenna.

Claim 4, figure 4 of Sievenpiper discloses a GPS antenna(18-1).

Claim 5, the reflector(16) disclosed in figure 6a of Sievenpiper is rectangular.

Claims 6-8, figure 3 of Sievenpiper discloses an antenna module(24) whose sides and bottom surface constitute the reflector which appear to be substantially dimensioned with a depth as recited.

Claim 9, since the disclosed antenna and reflector geometry are as recited, the energy entering the passenger compartment of the disclosed antenna system should be well within the recited parameters.

Claim 10, figure 3 of Maoz discloses a transmission line(105) printed directly on the PCB.

Claim 11, the second slot(109) disclosed in Maoz is a parasitic slot coupled to the first slot(104).

Claims 12, 15 and 17, the dimensions of the antenna disclosed in Maoz are within the recited values based on the disclosure of figure 3.

Claims 13-14, figure 6a of Sievenpiper discloses a plug connector(28).

Claim 16, pigtailed are well known in the art and their use in a system as recited is an obvious modification of the disclosed and referenced system.

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Claims 18-20, the recited operational characteristics are obtainable with the use of the above disclosed and referenced antenna.

Claims 21-22, the antenna elements disclosed in Maoz are linearly polarized elements and can be used as recited.

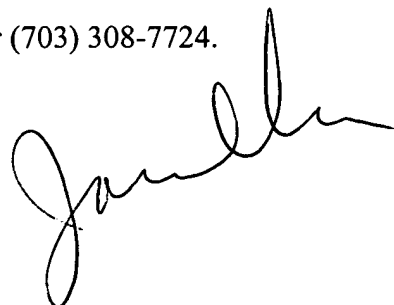
It would have been obvious to one of ordinary skill in the art at the time of the invention to use the slot antenna elements disclosed in Maoz with the antenna disclosed in Sievenpiper for improved performance as disclosed in Maoz.

*Correspondence*

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Jim Clinger whose phone number is (703) 305-0619.

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center whose telephone number is (703) 308-0956.

Papers related to Technology Center 2800 applications only may be submitted to Technology Center 2800 by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Technology Center Fax Center number is (703) 308-7722 or (703) 308-7724.

A handwritten signature in black ink, appearing to read "J. Clinger", is located at the bottom right of the page.